



**УНИВЕРЗИТЕТ У БАЊОЈ ЛУЦИ**  
UNIVERSITY OF BANJA LUKA  
**ПРИРОДНО-МАТЕМАТИЧКИ ФАКУЛТЕТ**  
FACULTY OF NATURAL SCIENCES AND MATHEMATICS



CHEMISTRY DEPARTMENT

FIRST CYCLE OF STUDY

Chemistry/Chemistry Education

<b>Course name</b>	<b>Chemistry of Natural Products</b>			
<b>Course code</b>	<b>Course status</b>	<b>Semester</b>	<b>Hours of instruction</b>	<b>ECTS</b>
1C16HOS403	required	VI	3+2	6
<b>Teacher(s)</b>	<b>Prof. Snežana Uletilović PhD</b>			

<b>Prerequisite course(s)</b>	<b>Entry requirements</b>
Organic chemistry 2	Passed exam

**Course goals**  
The aim of the course is to acquire knowledge about synthesis, classification and role in metabolism, as well as the basic principles of isolation, purification, characterization and structure determination of the most important classes of natural products.

**Learning outcomes**  
The student knows the basic principles of isolation, purification, identification, characterization and determination of the structure of the most important classes of natural products. The student explains the role of these compounds in the organisms that produce them.

**Course content**

1. Carbohydrates (properties, division and production).
2. Lipids: physical and chemical properties of fatty acids, isolation and analysis of fatty acids, natural fats. and oils, waxes, complex lipids, glycolipids, lipoproteins, structure of cell membranes.
3. Terpenes, biosynthesis and classification of terpenes.
4. Steroids: steroid biosynthesis, steroid classification and nomenclature.
5. Amino acids, peptides and proteins: division and nomenclature of amino acids, physico-chemical properties of amino acids, classification and representatives of proteins, protein structure.
6. Nucleic acids (structure of nucleic acids, properties and role of n.a., protein synthesis).
7. Alkaloids: physical properties of alkaloids, identification and division of alkaloids.
8. Natural aromatic compounds.
9. Vitamins. 10. Antibiotics.

**Teaching methods**  
Lectures, laboratory exercises, consultations.

**Books and other learning materials**  
Slobodan Petrović, Dušan Mijin, Nadežda Stojanović: **Hemija prirodnih organskih jedinjenja**, Tehnološko-metalurški fakultet, Beograd, 2005.  
Snežana Uletilović: **Hemija prirodnih proizvoda**, Prirodno-matematički fakultet, Banjaluka, 2011.  
R. M Jankov, N. Polović, T. Ćirković Veličković: **Praktikum - Hemija prirodnih proizvoda**, Hemijski fakultet, Beograd, 2006. ISBN: 86-7220-028-4

**Course activities and grading method**

Colloquium, test and final exam			
Activity and attendance at classes	5	Tests	20
Laboratory exercises	15	Final exam	60

**Additional course notes**  
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<b>Name of the teacher who prepared this form</b>	Snežana Uletilović
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